An Analysis of

An Economic Report to the Governor of the State of Tennessee on the State's Economic Outlook

A Report to the State Funding Board

prepared by

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Introduction

Each year the Center for Business and Economic Research (CBER) at the University of Tennessee publishes *An Economic Report to the Governor*. The report contains forecast values for key economic variables and commentary on the extent to which changes in these variables may affect local, regional, state and national economies. CBER derives its forecast for the United States from the forecast of Wharton Econometric Forecasting Associates (WEFA); the forecast and analysis for Tennessee is derived from the Tennessee Econometric Model (TEM). Both the U.S. and Tennessee forecasts presented in *An Economic Report to the Governor* are based on data from November 1997.

The Tennessee State Funding Board is required by statute to comment on the reasonableness of the forecasted growth rate of the state's economy, as measured by the growth rate of nominal personal income in Tennessee. The forecasted growth rate is used as a basis for determining the increase in appropriations from state tax revenues for the next fiscal year. The purpose of this paper is to assist the Tennessee State Funding Board in its consideration of CBER's forecast for 1998.

Forecast Summary: U.S.

Gross Domestic Product

Gross Domestic Product (GDP). For 1998, WEFA (CBER) predicts GDP to grow 2.5%. In September, 1997, the Congressional Budget Office forecast an increase in GDP of 2.1% for 1998. In January, 1998, the CBO changed their forecast to 2.7%, a nominal increase of $46 billion. CBO "still believes the growth of real GDP will be slower in calendar year 1998 than in 1997," but explains their adjusted forecast by noting that "the economy grew faster in 1997 than had been anticipated and is not cooling as quickly as CBO expected."[2]

GDP Growth by Quarter: 1997 (92$)[1] Dept. of Commerce: Revised			
I	II	III	IV
4.9%	3.3%	3.1%	3.7%

Table 1

The most significant factor that could affect GDP is the economic crisis in Asia. If the crisis worsens, or continues for an extended period, direct effects would be felt in the net exports category of GDP, and indirect effects could be expected in job growth.

GDP Growth by Quarter: 1998 (92$)[3] WEFA (CBER) Forecast				
I	II	III	IV	Year
3.0%	2.7%	2.3%	2.0%	**2.5%**

Table 2

[1] Press Release; March 26, 1998; http://www.bea.doc.gov/bea/dn/niptbl-d.htm#Table 1, Part A.

[2] *The Economic and Budget Outlook*, Congressional Budget Office, January, 1998, p. xvi.

The Asian Crisis and its effect on currency value. Had the intervention of the International Monetary Fund (IMF) proven to be immediately effective the trade imbalance that was indicated by the monetary crisis in Asia might have been short-lived. However, the currencies of many Asian countries have failed to recover substantially despite IMF intervention. Until such time as investors once again become confident of the stability of Asian economies, Asian currencies will probably trade at a discount to the U.S. dollar. This kind of currency value imbalance has significant long term implications for investment in the countries with emerging economies, but it also has short term significance in regard to trade with those countries. If the currency of a country is available at a discount, the products of that country are also available at a discount.

The Value of the Dollar. Table 3 shows a partial list of an index of the currencies of nineteen countries with established industrial economies. The index is compiled and maintained by J.P. Morgan. The table does not indicate currency values, but indicates the relationship of each currency to a composite of the other currencies included in the index.

Index of 19 Currencies[4]					
	Australia	***Canada***	***Germany***	***Japan***	***U.S.***
Jul 97	93.9	84.8	101.7	134.7	104.6
Aug 97	95.3	84.5	101.5	133.4	106.8
Sept 97	93.0	84.6	102.5	128.7	106.4
Oct 97	92.2	84.5	102.9	127.7	105.8
Nov 97	89.3	83.0	103.3	122.5	106.6
Dec 97	86.6	82.7	102.9	120.0	109.2
Jan 98	86.6	82.1	102.5	121.4	110.4
Feb 98	88.1	82.3	102.4	124.7	109.2

Table 3

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[3] *An Economic Report to the Governor.* Knoxville: Center for Business and Economic Research, The University of Tennessee. March 1998, p. A-1. Subsequent references will be noted in the text parenthetically by page numbers.

[4] J.P. Morgan, March 1998: http://www.jpmorgan.com/MarketDataInd/Forex/currIndex.html. Currencies of the following countries are included in this composite: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Italy, Japan, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States.

Table 4 is a similar table. The composite of which it is a sample includes all of the countries in Table 2, but also includes 26 other countries with "emerging" economies, many of which are in Asia.

Index of 45 Currencies[5]						
	Indonesia	**Korea**	**Malaysia**	**Philippines**	**Thailand**	**U.S.**
Jul 97	103.7	85.8	115.3	110.1	92.9	104.9
Aug 97	96.9	86.8	110.3	106.2	92.8	106.7
Sep 97	90.2	85.9	100.7	96.7	85.0	107.0
Oct 97	76.6	84.3	92.2	92.7	83.9	106.7
Nov 97	83.0	77.0	91.3	90.6	79.8	108.2
Dec 97	61.9	59.0	84.5	87.3	72.1	111.9
Jan 98	32.8	54.8	84.3	80.1	63.1	114.2
Feb 98	33.8	54.2	88.5	84.2	70.7	112.6

Table 4

WEFA (CBER) expects ***personal consumption expenditures***, which account for approximately 2/3 of GDP, to grow by 3.0% in 1998. This follows 3.3% growth in 1997. CBER notes that high levels of consumer debt can be explained in part by the fact that many consumers use credit cards "in place of cash and checks for ordinary, nondurable expenditures such as groceries" (4). For that reason CBER "anticipate[s] the consumer to continue as an engine of growth despite a currently high consumer debt to personal income ratio" (4).

CBER notes that ***gross private domestic investment*** is "historically the most volatile component of U.S. GDP" (4). That indeed proved to be the case last year. WEFA (CBER) forecast growth in this category at 4.7%; actual growth was 9.7%. WEFA (CBER) expects growth in 1998 of 7.9%. Gross private domestic investment accounts for approximately 1/5 of GDP.

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[5] J.P. Morgan, March 1998: http://www.jpmorgan.com/MarketDataInd/Forex/currIndex.html. Currencies of the following countries are included in this composite: Argentina, Australia, Austria, Belgium, Brazil, Canada, Chile, Colombia, Denmark, Ecuador, Finland, France, Germany, Greece, Hong Kong, India, Indonesia, Ireland, Italy, Japan, Korea, Kuwait, Malaysia, Mexico, Morocco, Netherlands, New Zealand, Nigeria, Norway, Pakistan, Peru, Philippines, Portugal, Saudi Arabia, Singapore, South Africa, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, UK, US, Venezuela.

As was the case in 1997 ***government consumption and gross investment*** are expected to grow slowly overall. However, "declines in federal government expenditures" are expected to be accompanied by "increases in state and local government expenditures" (6). WEFA (CBER) expects growth in this category during 1998 of 1.3%, which follows 0.9% growth in 1997.

Net exports are expected to decrease by 3.8%, due in part to the decrease in the value of Asian currencies.. The net exports category is determined by the difference between exports, which are expected to grow 6.4%, and imports, which are expected to grow 10.2%. Thus, even with healthy export growth, *net exports* will shrink because imports will grow even more.

WEFA (CBER) comparison with other forecasting organizations. The following table presents a selection of other forecasting agencies. As was the case in 1997, the WEFA (CBER) forecast (2.5%) is below the average of the other agencies (2.7%).

Forecast Comparison: 1998 Gross Domestic Product Percentage Growth (92$)[6]	
Agency	
Conference Board	3.4%
CS First Boston	3.0%
Regional Financial Assoc.	3.0%
JP Morgan	2.9%
Northern Trust	2.9%
Michigan—RSQE	2.9%
DuPont	2.6%
Eaton Corporation	2.6%
Merrill Lynch	2.6%
CBO	2.7%
FannieMae	2.5%
Macroeconomic Advisers	1.7%
WEFA (CBER)	**2.5%**
Forecast Range: Low	1.7%
Forecast Range: High	3.4%
Forecast Average	**2.7%**

Table 5

[6] This table is compiled from information contained in *Consensus Forecasts: A Digest of International Economic Forecasts*, February 9, 1998. Forecasts are from February, 1998, with the following exceptions: the Congressional Budget Office forecast is from January, 1998, *The Economic and Budget Outlook*, p. xvii; the Macroeconomic Advisers forecast is from December, 1997, *The U.S. Economic Outlook*, Macroeconomic Advisers, LLC., December 12, 1997, p. 2.

Unemployment

Unemployment Rate and Job Growth. WEFA (CBER) forecasts a U.S. unemployment rate of 4.6% in 1998, slightly lower than the average of other forecasting agencies (4.7%), and low enough to indicate that the economy continues at or near full employment. New data in employment in Tennessee have indicated that job growth may have been better than expected during the last quarter of 1997, and that continued low unemployment can be expected for 1998. WEFA (CBER) expects the number of U.S. jobs to increase 1.9% in 1998.

Forecast Comparison: 1998[7] Unemployment Rate	
Agency	**Rate**
First Boston	4.6%
Merrill Lynch	5.1%
Dupont	4.8%
JP Morgan	4.5%
Northern Trust	4.7%
Conference Board	4.1%
Eaton	4.9%
Macroeco. Adv.	4.9%
Standard & Poor's	4.7%
Reg. Fin. Assoc.	4.6%
Michigan-RSQE	4.8%
FannieMae	4.8%
CBO	4.8%
WEFA (CBER)	**4.6%**
Forecast Average	**4.7%**
Forecast Range: Low	4.1%
Forecast Range: High	5.1%

Table 6

Inflation

Inflation was by all measures under control in 1997. The Federal Reserve Bank of Kansas City notes that "the sharp deceleration of food and energy prices accounted for much of the [1997] slowdown in overall CPI (consumer price index), PCE (personal consumption expenditures), and PPI (producer price index) inflation" (8).[8] For 1997 the CPI rose 1.9%, PCE rose 1.5%, and the PPI declined 0.7%. In 1998 WEFA (CBER) expects inflation to increase 2.2% as measured by the Consumer Price Index, 2.1% as measured by the GDP Implicit Deflator, and 2.0% as measured by the Personal Consumption Deflator. According

[7] This table is compiled from information contained in *Consensus Forecasts: A Digest of International Economic Forecasts*, February 9, 1998. Forecasts are from February, 1998, with the following exceptions: the Congressional Budget Office forecast is from January, 1998, *The Economic and Budget Outlook*, p. xvii; the Macroeconomic Advisers forecast is from December, 1997, *The U.S. Economic Outlook*, Macroeconomic Advisers, LLC., December 12, 1997, p. 2.

[8] "Progress Toward Price Stability: A 1997 Inflation Report." Todd E. Clark, *Economic Review*, Federal Reserve Bank of Kansas City, Vol. 83, No. 1, p. 8.

to the FRB of Kansas City, CPI inflation in 1998 “will be reduced by an updating of the basket of goods and services for which the index tracks prices. Effective in January, the basket is based on the expenditures of the typical consumer over 1993-95 instead of 1982-84” (11).

Treasury Bonds

Federal funds rate and 10 year treasury bonds. WEFA (CBER) expects the federal funds rate to average 5.7% for 1998 (ix). The federal funds rate is the rate banks charge each other for overnight loans made to meet reserve requirements. The last time the Federal Reserve raised the federal funds rate was March 25, 1997, to 5.5%.

WEFA (CBER) forecasts a 10 year treasury bond rate of 6.5%, slightly higher than the average of this group of forecasters (6.3%).

One indication of a favorable long-term outlook for inflation is that the spread between inflation-protected 5 and 10 year treasury notes and regular 5 and 10 year notes declined last year. Inflation-protected notes are indexed to the CPI; their yield is unaffected by inflation. Because investors are confident that inflation will be minimal over the next few years, they are unwilling to pay a premium for inflation protection.

Forecast Comparison: Feb. 1999 Ten Year Treasury Bonds[9]	
Agency	**Rate**
Mortgage Bnkrs. Assoc.	5.9%
FannieMae	6.5%
Dupont	6.0%
CS First Boston	5.7%
Northern Trust	6.1%
Conference Board	6.5%
Eaton	6.2%
Macroeco. Adv.	6.3%
Regional Fin. Assoc.	6.6%
Standard & Poor’s	5.4%
Michigan-RSQE	5.7%
WEFA (CBER)	**6.5%**
Forecast Average	**6.3%**
Forecast Range: Low	5.4%
Forecast Range: High	6.6%

Table 7

[9] This table is compiled from information contained in *Consensus Forecasts: A Digest of International Economic Forecasts*, February 9, 1998. Rates shown are the rates forecasts expect at the end of February, 1999, with the exception of Macroeconomic Advisers, which is taken from *The U.S. Economic Outlook*, Macroeconomic Advisers, LLC. December 12, 1997, p. 2.

Forecast Summary: Tennessee

Income

Nominal Personal Income. CBER expects nominal personal income in Tennessee to increase 5.1% in 1998. This compares with an expected increase of 5.1% for U.S. nominal personal income.

Other measures of personal income. CBER also forecasts growth estimates for other measures of personal income. Tennessee *per capita personal income* continues to lag behind the U.S. average. WEFA (CBER) projects U.S. per capita personal income growth of 4.2% in 1998; CBER projects only 3.9% growth in Tennessee per capita personal income.

Tennessee Nominal Personal Income Growth: 1998	
Wages and Salaries	5.2%
Other Labor Income	4.5%
Proprietors' Income	4.2%
Rent, Interest & Dividends	5.6%
Transfer Payments	4.9%
Total	**5.1%**

Table 8

As was true in 1997, forecasted growth in the inflation-adjusted categories of *per capita personal income* and *annual wages per worker* lag significantly behind other measures, even though inflation has been moderate in 1997 and is forecast to remain so in 1998.

Other Measures of Personal Income Growth: 1998	
Nominal personal income	5.1%
Inflation-adjusted personal income	3.0%
Inflation-adjusted *per capita* personal income	1.8%
Inflation-adjusted average annual *wages per worker*	1.9%

Table 9

Per Capita Taxable Sales. Last year's report noted the significant population increase in Tennessee in the first half of this decade (7.8% from 1990-1995). Given the moderate aggregate taxable sales growth during 1995 and 1996, the most significant implication of the population increase was that *per capita taxable sales* would grow very slowly. That did not prove to be the case in 1997, however. In last year's report CBER forecast *per capita taxable sales growth* at 0.7% for 1997 (92$), and 0.7% for 1998 as well

Per Capita Taxable Sales Growth (92$)					
1994	**1995**	**1996**	**1997**	**1998**	**1999**
5.3%	3.7%	1.0%	5.3%	1.3%	0.6%

Table 10

(92$). Actual growth for 1997 is now estimated at 5.3%. CBER has raised their expectations for 1998 growth to 1.3%; however, CBER continues to forecast slow growth in this category, 0.6%, in 1999.

Personal Income forecast error. Until recently CBER had been consistent in producing forecast estimates of nominal personal income growth that were below actual rates. However, CBER forecast a nominal personal income growth of 5.6% for 1996; actual growth was 4.6%. In 1997 CBER forecast growth of 5.5%; actual growth was 4.9%. CBER notes that this year new employment and job growth data indicate that their forecast of 5.1% growth should be considered as a "worst-case scenario for the state's short-term prospects" (x).

Tennessee Nominal Personal Income Forecast Error[10]			
Year	**Actual**	**Forecast**	**Error**
1990	6.3	5.8	-0.5
1991	5.0	4.9	-0.1
1992	8.7	5.0	-3.7
1993	5.9	5.8	-0.1
1994	7.0	6.7	-0.3
1995	6.9	5.9	-1.0
1996	4.6	5.6	+1.0
1997	4.9	5.5	+0.7

Table 11

Unemployment Rate and Job Growth. CBER forecasts the unemployment rate in Tennessee to hold steady at 5.3% in 1998 and in 1999, a slight increase from the 5.1% for 1997. While this is at or near full employment, it should be noted that economic activity has not been evenly distributed across the state. Consequently, there is significant variance in unemployment rates. The Department of Employment Security reported in January that there were 13 counties in Tennessee with double-digit unemployment rates. The highest is 17.3%, in Clay County. There are 44 counties in Tennessee that qualify as "labor surplus areas," areas with unemployment rates that are 1.2 times the national average.

The lowest unemployment rate in the state is 2.2%, in Williamson County. There are 8 other counties with unemployment rates below 4.0%.[11]

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[10] *An Economic Report to the Governor*. Knoxville: Center for Business and Economic Research, The University of Tennessee. March 1998.

[11] *The Labor Market Report*, January 1998, p. 1-3. Tennessee Department of Employment Security.

CBER expects total nonagricultural employment in Tennessee to increase 1.2% in 1998 and 1.4% in 1999. CBER forecasts agricultural employment in Tennessee to decline 4.2% in 1998 and to continue to decline throughout the forecast horizon (2006).

Gross State Product (GSP). CBER forecasts Tennessee's GSP to increase 2.5% in 1998, essentially the same as U.S. GDP.

Non-Agricultural Jobs Percentage Growth				
	1996	**1997**	**1998**	**1999**
Tennessee	1.5	0.9	1.2	1.4
U.S.	2.0	2.2	1.9	1.3

Table 12

CBER's outlook for the production of goods and services in Tennessee is brighter than the outlook for the U.S. as a whole throughout the forecast horizon (2006). CBER expects an average GSP growth in excess of 3% through the year 2006.

Conclusion

Given the 2.1% growth of the Tennessee economy in 1997 (92$), CBER's forecast of 2.5% (92$) and 5.0% (nominal) GSP growth for 1998 appears reasonable.

CBER's forecast of 5.1% growth in Tennessee nominal personal income for 1998 also appears reasonable, given the historical correlation between overall economic growth and personal income growth.

However, for budgetary purposes the Funding Board may wish to consider the following:

(1) the effects of low inflation on sales tax revenue growth;
(2) the effects of the length of the economic expansion upon durable goods purchases;
(3) the possible effects of the Asian economic crises on Tennessee exports;
(4) the possible effects of the Asian economic crises on the domestic marketability of Tennessee's manufactured products;
(5) the forecasted slow growth of per capita taxable sales;
(6) the continued population growth in Tennessee and the demand such growth will place upon the state's infrastructure; and
(7) the fact that the personal income forecasts for 1996 and 1997 proved to be higher than actual growth rates.

APPENDICES

Appendix A
Statutory Requirements

Tennessee Constitution
Article II, §24 (excerpt)

In no year shall the rate of growth of appropriations from state tax revenues exceed the estimated rate of growth of the state's economy as determined by law.

TCA §9-6-201

(a) The estimated rate of growth of the state's economy shall be based upon the projected change in Tennessee personal income.

(b) Tennessee personal income shall consist of those sources of income included in the United States department of commerce's definition of "personal income."

TCA §9-6-202

(a) At least once each year, and whenever requested to do so by the commissioner of finance and administration or by the joint request of the chairs of the finance, ways and means committees of the senate and house of representatives, the state funding board shall secure from the Tennessee econometric model a report of the estimated rate of growth of the state's economy. such report shall include the major assumptions and the methodology used in arriving at such estimate.

(b) Upon receiving the report specified in subsection (a), the state funding board shall make comments relating to the reasonableness of the estimate, including any different estimate the board deems necessary. The board shall also enclose a list identifying state tax revenue sources and nontax revenue sources, approved by the attorney general and reporter. The department of finance and administration shall provide to the board revenue estimates for each source.

(c) In the event data from Tennessee econometric model is unavailable, the funding board, after consulting with the finance, ways and means committees of the senate and house of representatives, shall obtain and/or prepare a report of the estimated rate of growth of the state's economy.

(d) The reports specified in subsections (a), (b) and (c) shall be forwarded to the commissioner of finance and administration and to each member of the general assembly, after review and definitive comment by the finance, ways and means committees of the senate and house of representatives.

(e)(1) In November of each year, the state funding board shall conduct public hearings to develop consensus estimates of state revenue for the upcoming fiscal year, as well as any revisions to the current fiscal year estimates, as the board deems appropriate.

(2) The funding board shall request economic forecasts and revenue estimates from representatives of state higher education institution business centers located in each of the grand divisions and such other groups or persons as the funding board deems appropriate.

(3) On December 1, or as soon thereafter as practical, the funding board shall present its state revenue estimates, along with a summary of the economic forecast upon which the estimates are based, to the governor and the chairs of the senate and house finance, ways and means committees. If, in the opinion of the funding board, circumstances warrant a review of state revenue estimates it has previously presented, or upon a request of the chairs, the funding board shall consider information it deems necessary and appropriate and may revise its state revenue estimates if appropriate. Any revision to is revenue estimates and reasons therefore shall be forwarded to the governor and chairs.

TCA §9-6-203 (excerpt)

(c) When in any budget document the percentage increase of recommended appropriations from state tax revenues exceeds the percentage increase of estimated Tennessee personal income as defined in ϶ 9-6-201, for the ensuing fiscal year, the governor shall submit a bill or bills for introduction in both houses of the general assembly which shall contain no other subject matter and shall set forth the dollar and percentage by which the estimated growth of the state's economy is exceeded by the appropriations of state tax revenue in accordance with article II, ϶ 24 of the Constitution of Tennessee.

(d) When the percentage increase of appropriations of state tax revenue by the general assembly exceeds the percentage increase of estimated Tennessee personal income as defined in ϶ 9-6-201, for the ensuing fiscal year, the general assembly shall by law containing no other subject matter, set forth the dollar and the percentage by which the estimated growth of the state's economy is exceeded by the appropriations of state tax revenue in accordance with article II, э 24 of the Constitution of Tennessee.

Appendix B
Years in which Appropriations have Exceeded Growth[12]

Fiscal Year 1984-1985	$396,100,000	14.60 %
Fiscal Year 1985-1986	$58,000,000	1.79 %
Fiscal Year 1986-1987	$100,000,000	2.76 %
Fiscal Year 1988-1989	$101,000,000	2.38 %
Fiscal Year 1989-1990	$74,000,000	1.59 %
Fiscal Year 1991-1992	$703,100,000	15.09 %
Fiscal Year 1992-1993	$450,000,000	8.69 %
Fiscal Year 1996-1997	$55,000,000	0.84%

Appendix C
Personal Income Definition

Personal income is a measure of income received by individuals, unincorporated businesses, and non-profit organizations. While it is an important measure of economic activity, personal income is not limited to the wages and salaries of persons. For purposes of establishing this category, the Bureau of Economic Analysis of the U.S. Department of Commerce defines persons as “. . . individuals, non-profit institutions, private non-insured welfare funds, and private trust funds . . . .”

The components of personal income include:

wage and salary disbursements;

other labor income, including employer contributions for private insurance and retirement programs;

proprietors’ income, which consists of net income of sole proprietorships and non-incorporated businesses;

rental income, personal interest income, dividends and royalties;

transfer payments by businesses and government, corporate gifts to non-profit institutions, and other payments not resulting from current services or production.[13]

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12 Tennessee Code Annotated э 9-6-203(e).

13 U.S. Department of Commerce, Bureau of Economic Analysis.

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